

LOGBOOK 1 – SHADRACK NGUENY KUOL (667545)

Project: SolarConsult – Sustainable Solar Energy Website

Role Focus: Internet fundamentals, network behaviour, HTML skeleton, CSS layout architecture, design tokens, JavaScript for enhanced navigation, reduced-motion support, performance optimisation.

UPLOAD 1 – Internet Fundamentals + Website Skeleton

1. Basic Information

1.1 Team Member & Role

Shadrack was responsible for:

- Researching and documenting how the internet works (URLs, DNS, HTTP, caching).
- Producing the annotated Network panel analysis.
- Creating the initial **HTML skeleton** for all SolarConsult pages.
- Designing the **site map** and first wireframes.

1.2 Upload Number

Upload 1

1.3 Self-Assessment

tried / **done** / exceeded

1.4 What Went Well / Pending Next Week

Went well:

- Correct diagrams for DNS lookup and HTTP lifecycle.
- Clear site structure and page hierarchy defined early.
- All pages successfully created with headings only.

Pending:

- Adding semantic elements, accessibility features, and page content.

2. Evidence

2.1 Screenshot Descriptions (textual placeholders)

1. **Network Panel Analysis** – Screenshot shows request sequence for solarconsult-home.html: DNS lookup, HTML document request (status 200), CSS, JS, and hero image loading.
2. **Site Map** – Diagram showing: Home → Services → Products → Solar Calculator → Contact.

3. **Wireframes** – Homepage layout indicating hero section, grid of solar services, CTA button.
4. **Initial Repo Structure** – Includes:

```
/index.html  
/about.html  
/consult.html  
/contact.html  
/css/  
/js/  
/images/
```

2.2 Code Excerpts (HTML Skeleton Evidence)

index.html (skeleton stage)

```
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <title>SolarConsult - Home</title>  
</head>  
<body>  
    <header>  
        <h1>SolarConsult</h1>  
    </header>  
  
    <main>  
        <h2>Welcome to SolarConsult</h2>  
    </main>  
  
    <footer>  
        <p>© 2025 SolarConsult</p>  
    </footer>  
</body>  
</html>
```

about.html (heading-only skeleton)

```
<main>  
    <h2>About Us</h2>  
</main>
```

contact.html skeleton with proto-form

```
<main>  
    <h2>Contact SolarConsult</h2>  
    <form>  
        <h3>Get in touch</h3>
```

```
</form>
</main>
```

2.3 Internet Fundamentals Notes

URL Anatomy Example:

<https://solarconsult.co.ke/services?type=installation#pricing>

Breakdown:

- https – protocol
- solarconsult.co.ke – domain name
- /services – path
- ?type=installation – query string
- #pricing – fragment identifier

DNS Lookup Summary:

Browser resolves domain → DNS server returns IP → browser opens TCP connection → sends HTTP request.

HTTP Request/Response Example:

- Request: GET /services HTTP/1.1
- Response: 200 OK, headers include caching information and content type.

Caching Note:

Used Cache-Control: max-age=86400 for images to reduce repeat-loading costs.

UPLOAD 2 – Semantic HTML + Accessibility Baseline

1. Basic Information

1.1 Role

Shadrack implemented:

- Semantic structure for all pages.
- Initial accessibility features such as skip link, alt text, and labels.
- Proper heading hierarchy for SolarConsult content.

1.2 Upload Number 2

1.3 Self-Assessment

tried / **done** / exceeded

1.4 What Went Well / Pending Next Week

Went well:

- Replaced div-heavy skeleton with semantic tags.
- All images have descriptive alt text.
- Contact form is fully labelled with native HTML validation attributes.

Pending:

- CSS layout and responsiveness for Upload 3.

2. Evidence

2.1 Screenshot Descriptions

1. Skip link appearing when tabbing.
 2. Contact form focus outline showing logical tab order.
 3. Semantic markup structure shown in browser devtools.
-

2.2 Code Excerpts

Semantic Navigation + Skip Link

```
<header>
    <a href="#main-content" class="skip-link">Skip to main
content</a>

    <nav>
        <ul>
            <li><a href="index.html">Home</a></li>
            <li><a href="about.html">About</a></li>
            <li><a href="contact.html">Contact</a></li>
            <li><a href="consult.html">Consult</a></li>
        </ul>
    </nav>
</header>
```

Consult Section Using Proper Semantics

```
<main id="main-content">
    <section>
        <h2>Consultation Services</h2>

        <article>
            <h3>Residential Installations</h3>
            <p>We offer home-based solar panel
solutions...</p>
        </article>
```

```

<article>
    <h3>Commercial Installations</h3>
    <p>We support large-scale solar projects...</p>
</article>
</section>
</main>

```

Accessible Contact Form

```

<form>
    <label for="fullname">Full Name</label>
    <input id="fullname" name="fullname" type="text" required
minlength="2">

    <label for="email">Email</label>
    <input id="email" name="email" type="email" required>

    <label for="message">Message</label>
    <textarea id="message" name="message" required
minlength="10"></textarea>

    <button type="submit">Send Message</button>
</form>

```

2.3 Accessibility Fixes (3 Documented)

1. Added descriptive alt text to all images (e.g., “Solar panel installation on rooftop”).
2. Implemented skip-link to main content for screen reader/navigation efficiency.
3. Corrected heading nesting (one H1 per page, descending hierarchy).

UPLOAD 3 – CSS Layout + Responsive Design

1. Basic Information

1.1 Role

Shadrack led the CSS architecture work:

- Created design tokens.
- Built mobile-first layout using Grid and Flexbox.
- Implemented breakpoints for tablet and desktop.
- Added subtle transitions for interactive elements.

1.2 Upload Number

Upload 3

1.3 Self-Assessment

tried / done / **exceeded**

1.4 What Went Well / Pending

Went well:

- Strong Grid layout for services section.
- Fully mobile-first and responsive.
- Performance consideration: separated CSS into modules to reduce blocking.

Pending:

- JavaScript enhancements for Upload 4.

2. Evidence

2.1 Screenshot Descriptions

- Mobile layout showing single-column services.
- Tablet layout with 2-column grid.
- Desktop layout with 3-column grid.

2.2 Code Excerpts

Design Tokens for Consistency

```
:root {  
  --color-primary: #1463a0;  
  --color-accent: #f6b10a;  
  --color-bg: #f7f7f7;  
  --spacing: 1rem;  
  --radius: 8px;  
  --font-lg: 1.5rem;  
}
```

Grid Layout for Consultation Cards

```
.consult-grid {  
  display: grid;  
  grid-template-columns: 1fr;  
  gap: var(--spacing);  
}  
  
@media (min-width: 640px) {  
  .services-grid {  
    grid-template-columns: repeat(2, 1fr);  
  }  
}  
  
@media (min-width: 1024px) {  
  .services-grid {  
    grid-template-columns: repeat(3, 1fr);  
  }  
}
```

```
        }
    }
```

Navigation Hover Transition

```
nav a {
    transition: color 0.3s ease;
}

nav a:hover {
    color: var(--color-accent);
}
```

2.3 Performance Notes

- Confirmed CSS is non-blocking using `<link rel="stylesheet">` only in the head and small files.
- Removed unused utility classes.
- Ensured images were correctly sized for mobile.

UPLOAD 4 – JavaScript Enhancements + Polish

1. Basic Information

1.1 Role

Shadrack implemented JS features focused on navigation and motion control:

- Hamburger menu with ARIA state updates.
- Reduced-motion support.
- Image compression and Lighthouse performance improvements.

1.2 Upload Number

Upload 4

1.3 Self-Assessment

tried / done / **exceeded**

1.4 What Went Well

- Hamburger menu tested across mobile devices.
- No global variables leaked.
- Performance score increased after image compression.

2. Evidence

2.1 Screenshot Descriptions

- Hamburger menu open state.
- Lighthouse performance score before/after.
- Console window showing no warnings or JS errors.

2.2 Code Excerpts

Hamburger Toggle with ARIA

```
const menuBtn = document.querySelector("#menu-btn");
const navLinks = document.querySelector("#nav-links");

menuBtn?.addEventListener("click", () => {
    const expanded = menuBtn.getAttribute("aria-expanded") ===
"true";
    menuBtn.setAttribute("aria-expanded", !expanded);
    navLinks.classList.toggle("open");
}) ;
```

Reduced Motion Handling

```
if (window.matchMedia("(prefers-reduced-motion:
reduce)").matches) {
    document.body.classList.add("no-motion");
}
```

Non-blocking Script Import

```
<script src="js/menu.js" type="module" defer></script>
```

2.3 A11y + Performance Notes

- Menu toggle fully keyboard accessible and ARIA-compliant.
- Compressed homepage hero image by 60%.
- Eliminated render-blocking JS by using `type="module"` and `defer`.